

## SOME HIBERNATION QUARTERS OF THE ORIENTAL FRUIT MOTH<sup>1</sup>

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In the fall of 1927 the writer collected a large number of peach mummies and pits from the college farm orchards for the purpose of studying the overwintering habits of the Oriental fruit moth and some of its parasites. Various bits of orchard débris were collected along with the pits and mummies. Shortly after the overwintering moths had emerged, in the early summer of 1928, the writer gathered all pits, mummies and other objects from which moths had emerged and made a record of the number of overwintering Oriental fruit moth larvæ found on them.

A review of the literature on the subject shows that there is little information on the types of orchard débris chosen by the Oriental fruit moth larvæ for overwintering quarters. It has been assumed, and no doubt correctly, that the majority of the overwintering larvæ go over the winter in and on the mummies on the ground. That any woody material, such as dead weeds, bits of twigs and roots of orchard trees, bits of wood, old asparagus roots, etc., may be used by the larvæ for overwintering quarters, is shown in this paper.

The data presented in Table 1 show the different kinds of material on which larvæ overwintered successfully. About seventy per cent. of all the pupal skins found were located on mature and immature peach mummies. Fifteen overwintering larvæ were found on the mummy pictured on Plate XVI, figure 1. The immature mummies, which apparently were from thinned peaches, were especially favored as overwintering situations. This was also true of old asparagus roots; every mass of these roots examined contained one or more empty pupal skins.

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TABLE 1. NUMBER OF ORIENTAL FRUIT MOTH LARVÆ FOUND OVERWINTERING ON DIFFERENT KINDS OF ORCHARD DEBRIS.

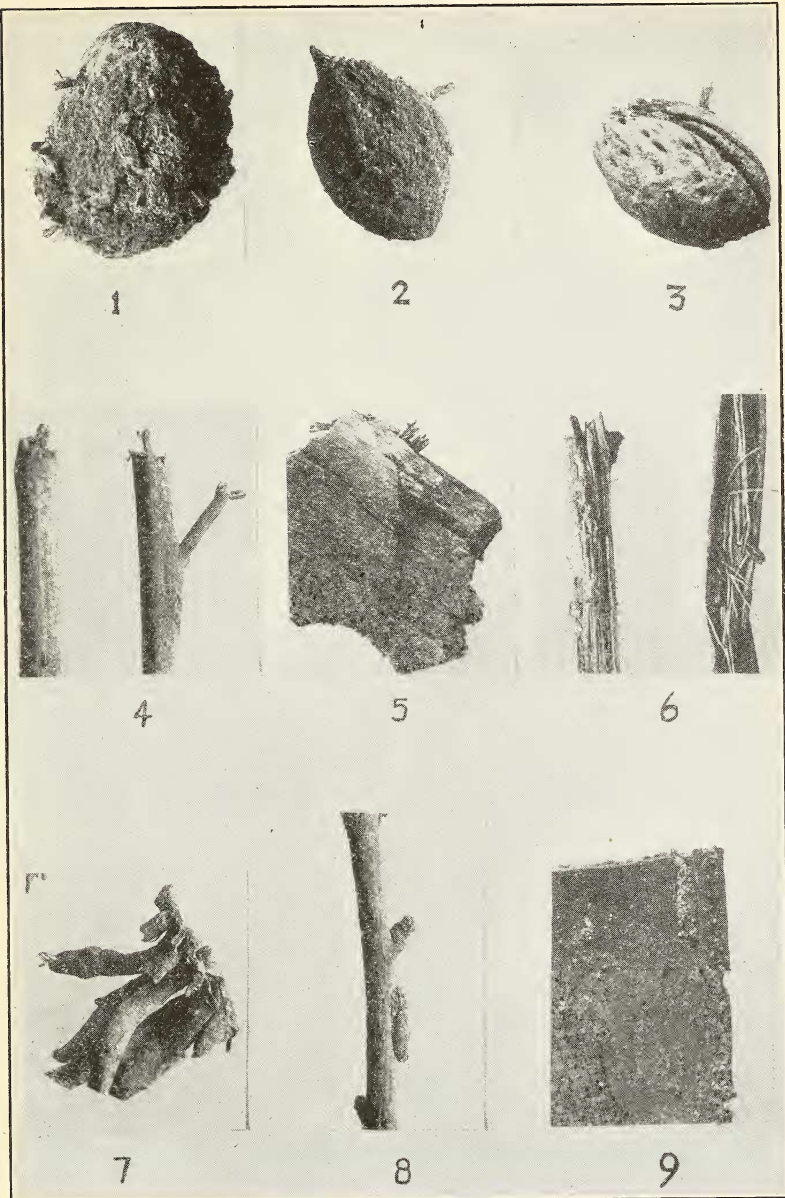
No.	Description of Object	No. of Larvæ	No.	Description of Object	No. of Larvæ
1	Mature mummy .....	98	8	Side of dead twig.....	3
2	Immature mummy .....	101	9	Rubber hose .....	6
3	Clean peach pit .....	18	10	Fragment of wood.....	4
4	End of dead twig.....	10	11	Match box .....	3
5	Bits of rotting wood.....	15	12	Peach tree root.....	2
6	Stalk (of corn?).....	10	13	Curled leaf .....	1
7	Asparagus roots .....	16	14	Peach limb .....	7

Some of the situations in and on which larvæ were cocooned, and from which empty pupal cases may be seen protruding, are shown in Plate XVI, figures 1 to 9, inclusive. Numbers 1 to 9 in Table 1 correspond, respectively, to figures 1 to 9 on Plate XVI. The individual photographs on Plate XVI were made by Mr. R. L. Coffin, of the Japanese Beetle Laboratory.

The data presented here indicate that the larvæ of the Oriental fruit moth will overwinter in any kind of waste material found in and around orchards. Although the majority of the larvæ found were in peach mummies, proportionally, there were no more larvæ in mummies than in some of the other situations noted. Therefore, control of this insect by the destruction of the overwintering larvæ on the ground should include the burning or plowing under in the spring of all mummies, pruned twigs, weeds and other orchard débris.

#### PLATE XVI

- FIGURE 1. Mature mummy.
- FIGURE 2. Immature mummy.
- FIGURE 3. Clean peach pit.
- FIGURE 4. End of dead twigs.
- FIGURE 5. Bits of rotten wood.
- FIGURE 6. Stalk (of corn?).
- FIGURE 7. Old asparagus roots.
- FIGURE 8. Side of dead twig.
- FIGURE 9. Section of rubber hose.



ORIENTAL FRUIT MOTH